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ABSTRACT

The purpose of this study was to provide a descriptive comparison of the teaching behaviors exhibited by preservice teachers trained in an experimental program (utilizing an Oral Language Program) and preservice teachers trained in a conventional program. Three dimensions of teacher behavior were compared: cognitive, behavior management, and motor behaviors. Two test teaching situations were employed. One group of students from the Oral Language Program (OLP) trained group taught an OLP lesson and another group of OLP trained students taught a teacher-prepared lesson and an OLP lesson, respectively. The videotaped test teaching situations were observed by trained observers utilizing the Spaulding Teacher Activity Rating Scale (STARS) and the Motor Behavior Descriptive Categories (MBDC) developed by the researcher. Conclusions include: (1) OLP trained teachers exhibit similar patterns of behavior between teacher-prepared lessons and OLP lessons on the three dimensions of behavior observed; (2) Conventionally trained teachers exhibit consistent patterns of behavior on the cognitive and motor dimensions of behavior on the cognitive and motor dimensions of behavior between teacher-prepared and OLP lessons; and (3) OLP and conventionally trained teachers exhibit similar patterns of behavior on the cognitive and motor behavior dimension when teaching OLP lessons, but the patterns are significantly dissimilar on the behavior management dimension. (CK)

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A COMPARISON OF OBSERVED TEACHING BEHAVIOR OF ORAL LANGUAGE PROGRAM TRAINED AND CONVENTIONALLY TRAINED PRESERVICE READING TEACHERS: A FORMATIVE EVALUATION

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A Comparison of Observed Teaching Behavior of Oral Language Program Trained and Conventionally Trained Preservice Reading Teachers*

David R. Kniefel

New Mexico State University is located in a multicultural, multilinguistic area with many Spanish-speeking and Indian students. The need for elementary teachers in this locale with the background and skills necessary to teach English as a second language led the reading methodology instructors at New Mexico State to initiate an experimental program for providing these skills.

The intermediate objective of preservice teacher education, as defined by Medley and Mitzel, is "...to get teachers to exhibit certain behaviors while they teach."[1] To enable the course instructors to evaluate their intermediate objectives some form of comparative description or formative evaluation was needed.

The purpose of this study was to provide a descriptive comparison of the teaching behaviors exhibited by preservice teachers trained in the Experimental program (utilizing the Oral Language Program) and preservice teachers trained in the conventional program. Three dimensions of teacher behavior were compared: cognitive, behavior management, and motor behaviors.

To achieve this purpose, five specific objectives were defined. They were as follows:

1. To compare those teaching behaviors exhibited by preservice teachers trained to use the Oral Language Program material when presenting Oral Language Program lessons and teacher-prepared lessons.

2. To compare those teaching behaviors exhibited by conventionally trained preservice teachers when presenting Oral Language Program lessons and teacher-prepared lessons.

3. To compare those teaching behaviors exhibited by Oral Language Program trained and conventionally trained preservice teachers when presenting an Oral Language Program lesson.

4. To compare those teaching behaviors exhibited by Oral Language Program trained and conventionally trained preservice teachers when presenting a teacher-prepared lesson.

5. To make recommendations based upon the formative evaluation for improving the program.

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The research was conducted during the spring and summer of the 1970 school year at New Mexico State University. The population of the study consisted of 46 preservice teachers enrolled in two sections of Developmental Reading (Ed. 455), during the spring semester of 1970. One section of Ed. 455, composed of 31 students, received training and micro-teaching tutorial experiences in the Oral Language Program (OLP), and the other, composed of 15 students, received conventional training and tutorial experience in the public schools.

The Oral Language Program (OLP) is a set of structured lessons developed by the Southwestern Cooperative Educational Laboratory. It is designed to increase the communication skills of children from low verbal stimulation homes and non-English speaking, culturally different homes through a high level of student recitation requiring a complementary level of student-teacher interaction. The lessons deal entirely with oral and auditory aspects of English that enable the children to become proficient speakers and understanders of standard American English. While the lessons contain no direct instruction in either reading or writing, the program is based on the assumption that verbal fluency in a language is a prerequisite to facility in reading and writing it.

The lessons are arranged in a structured and controlled sequence. Linguistic structures and content are carefully specified. Games, physical activities, dialogues, pictures, and other stimuli are used to gain and hold the children's interest. Teachers are required to demonstrate reinforcement activities, verbal modeling, and conventions or cues--physical gestures used for student management. Daily scripts that specify lesson objectives, content and teacher-student activities are provided for the teacher.[2]

The two sections of Ed. 455 were taught by different instructors. However, the instructors worked closely together, utilized the same course outline, met a minimum of once per week to discuss lecture topics and content, and provided students with the same handouts and audio-visual presentations. The point of departure for the two treatment groups was in the tutorial, or experimential segment of the course.

The students in the OLP group conducted their tutorial experience at the campus learning center with 18 first grade pupils experiencing English language difficulty. They prepared and presented OLP lessons to individual and small groups of pupils. While the emphasis was placed on the OLP lessons and their teaching techniques, the students also prepared and presented language experience lessons (i.e. oral and visual discrimination) and basal reading lessons.

The students in the conventional treatment group conducted their tutorial experience in the public schools with individual and small groups of pupils with known reading and language disabilities. They prepared and presented lessons designed to improve the pupil's performance in their respective areas of difficulty. In addition, these students utilized standard, prepared lessons such as the OLP, DISTAR, and other prepared curriculums.

THE DESIGN

The following design was employed to achieve the descriptive comparisons proposed as objectives for this study.

To achieve an unbiased comparison two test teaching situations were employed. Thus, one group of students from the OLP trained group taught an OLP lesson and another group of OLP trained students taught a teacher-prepared lesson while two trained Conventional groups taught a teacher-prepared lesson and an OLP lesson, respectively. To avoid practice effect and reduce the temporal effects, it was decided to have different teachers from within the treatment groups teach the test teaching situations. In other words, the design consisted of four independent groups as shown in Figure 1. Course requirements and time constraints restricted the sample size to five teachers from each group for each test situation.

	Test I OLP Lesson	Test II Teacher-Prepared Lesson
OLP Group	N = 5	N = 5
Conventional Group	N = 5	N = 5

Figure 1

The pupils taught by the preservice teachers in the test situations were those attending a special class at the New Mexico State University Dove Learning Center. Four groups of three first-grade pupils were formed by the laboratory classroom teacher. The groups were evenly distributed between the treatment groups and the test situations. To acquaint each preservice teacher with his students, each participant was given a brief, teacher-prepared form with information about each pupil's reading level, language usage, ability to follow directions and learning spontaneity.

The preservice teachers were all provided with one hour of preparation time regardless of the type of lesson taught. The materials available to all participants were identical and the two teaching stations were identical in physical arrangement. A wide variety of materials, including the OLP materials, were available, and an attempt was made to provide as representative a sample of familiar teaching materials as possible. The course instructors were consulted with regard to those materials that should be available.

The 20 subjects were assigned preparation and videotaping times. The only constraint placed on their selection of times was that a subject from the opposite group and test situation be available at the same time. Thus, members of the OLP group and the Conventional group were preparing at the same time for different test teaching situations. These individuals were videotaped at the same time. To prevent a possible teaching station effect, an equal number of OLP and Conventional group individuals and Test I and Test II situations were scheduled at the two videotaping (teaching) stations. The preceding videotaping schedule was successful for all but two individuals who could not coordinate their schedules. Therefore, a common time was agreed upon, but the taping was conducted on succeeding days. All videotaping was completed in a

three-day period during the last week of instruction of the 1970 spring semester.

The videotaped test teaching situations were observed by trained observers utilizing the Spaulding Teacher Activity Rating Schedule (STARS) and the Motor Behavior Description Categories (MBDC) developed by the researcher. These observational systems yielded three observed dimensions of teacher behavior. Behavior profiles were constructed for each dimension of behavior for each test situation within each treatment group. These profiles were subjected to statistical analysis.

In summary, the preceding design was employed to provide descriptive comparisons of the observed teaching behavior of OLP and conventionally trained preservice teachers. Sax would define this design as an ex post facto design, a combination of a descriptive and an experimental investigation.

> "It is descriptive in the sense that E (experimenter) has no direct control of experimental conditions; it is experimental because an attempt is made to infer casual relationships. It is used primarily where practical consideration makes it advantageous to select comparative groups who already differ in some important way from one another."[3]

The Sample

The constraints of normal University operations and scheduling made it impossible to control for instructor effects or randomly assign students to the treatment groups. In an attempt to make the course content the same, the instructors worked together very closely in all phases of the course except the tutorial experience. Because a selection factor that would bias the teaching behaviors of the members of the two sections might place a limitation on this study, a brief questionnaire designed to elicit biographic information and specific information relative to characteristics, identified by Barr and Ryans as related to teacher behavior, was constructed.[4] These data were compiled, subjected to a Chi Square (X^2) analysis, and the results are presented in Table 1.

The X^2 analysis followed the formulas and procedures presented by Siegel.[5] Each analysis was corrected for continuity by Yates' correction. Categories were combined where low frequencies would bias the results of the analysis if no loss of information would result. The analysis revealed no significant differences between the two sections on any of the 14 characteristics investigated.

A sample of 10 students was randomly selected from the OLP treatment group and the Conventional treatment group, and randomly assigned to one of two test teaching situations, forming the four independent groups.

INSTRUMENTATION

The Spaulding Teacher Activity Rating Schedule (STARS).[6] A modified version of the Spaulding Teacher Activity Schedule (STARS) was the instrument used to categorize the verbal aspects of teacher behavior. STARS is designed to categorize the overt efforts of teachers to bring about change in the social and cognitive behavior of pupils in the classroom. Thus, two dimensions of teacher behavior, characterized by the change desired, are the major focus of this instrument: cognitive (intellectual) and behavior management. These form two molar categories--cognitive structuring and

TABLE 1

DESCRIPTIVE CHARACTERISTICS OF THE OLP AND CONVENTIONAL SECTIONS OF ED. 455 OLP N=31 CONV. N=15

ITEM	OLP GROUP	CONVENTIONAL GROUP	X^2
SEX:			.0476
Male	3	1	
Female	28	14	
AGE:			.0332
20-25	25	11	
26-and above	6	4	
MARITAL STATUS:			1.5827
Married	14	9	
Divorced or Single	17	6	
NUMBER OF CHILDREN:			.1188
None (0)	25	12	
One (1) or more	6	3	
YEAR IN COLLEGE:			.2665
Junior	22	11	
Other	9	4	
CUMULATIVE GRADE POINT AVERAGE:			1.1190
1.75-2.49	6	2	
2.50-2.99	9	6	
3.00-3.49	9	4	
3.50-4.00	7	3	
NUMBER OF COLLEGES ATTENDED:			3.3471
One (1)	19	6	
Two (2)	7	5	
Three (3) or more	4	5	
PREVIOUS TEACHING EXPERIENCE:			.0056
None (0)	28	12	
One (1) Year or more	3	3	

TABLE 1 (Continued)

ITEM	OLP GROUP	CONVENTIONAL GROUP	X^2
TEACHING MAJOR:			.0080
Elementary Education	29	14	
Other	2	1	
TEACHING MINOR:			.6047
Social Science	21	11	
English	5	2	
Other	5	2	
What was the population of the community where you lived during most of your childhood?			.0243
Less than 999 to 24,999 pop.	18	6	
25,000 or greater pop.	13	10	
Do you speak Spanish?			.3366
Yes	8	2	
No	23	13	
What was the financial status of your family during your childhood?			3.7123
Below and low average	4	2	
Average	18	12	
Above average and high income	9	1	
How would you rate your religious activity?			1.6453
Have not attended church within past year and attend church once in a while	16	10	
Attend church once per week or involved in committee and/or teach Sunday school.	15	5	

social behavior management. A third molar category, known as non-pupil-transactional, refers to personal, private, or adult-transactional activities of the teacher. This category was not retained in the observational system in this study. Its deletion was justified since this type of behavior would not be (and was not) observed in the tightly structured laboratory setting of the test situations. Furthermore, observations were not recorded until rapport proceedings (i.e., seating children, exchanging names, etc.) were completed and ten seconds of lesson oriented behavior was observed.

Within each of the retained molar categories, the specific techniques employed by the teacher were categorized by types of teacher reinforcing, punishing, and structuring behaviors. Spaulding notes that these techniques or behaviors, have been found in several studies to be functionally distinct and correlated with pupil performance.[7] These general transactional categories and the molar categories are found in Table 2. The behaviors observed were coded as shown on the data sheet found in Figure 2.

In his 1970 revision of STARS, Spaulding includes an additional 23 transactional categories. At Spaulding's suggestion, these categories were deleted for this study as they had not been validated.[8]

The Motor Behavior Description Categories. The categories of motor behavior developed by this writer provide a broad measure of the motor behavior dimension of teacher behavior. They were derived from a review of the nonverbal categories found in existing observational systems as described by Simon and Boyer,[9] and the researcher's own observation of videotaped and live micro-teaching and classroom teaching of elementary students. They are as follows:

1. Head nodding--any overt movement of the head that indicates a directed teaching behavior, i.e., approval or disapproval.

2. Arm gestures--any overt movement of the arms that is a directed teaching behavior, i.e., pointing, or cueing behavior to elicit pupil response or using hands and arms to describe movement.

3. Media manipulations--any directed teaching behavior that is involved with the manipulation or presentation of some specific media, i.e., presenting a picture to the pupils, or manipulating a puppet.

4. Touching students--any overt movement on the part of the teacher that is a directed teaching behavior that places her in physical contact with a pupil or pupils, i.e., patting a student to show approval.

5. Gross movement--any overt directed body movement that changes the social distance between the teacher and her pupils, i.e., leaning closer to a pupil in order to hear response, or shifting the body away from the pupil.

6. None, or other--any random or personal motor behavior that is not a directed teaching behavior.

Directed teaching behavior was defined as behavior directly related to pupil management or the content of the lesson being observed.

The validation of these categories was achieved through a panel of experts. Sax, Tate, and Downie all support the use of a group of experts to establish the validity of measurement instruments.[10]

TABLE 2

STARS CATEGORIES

MOLAR CATEGORIES:

1. Cognitive Structuring - Teacher-child transactions focusing on modification of thinking and conceptual structures.

2. Social Behavior Management - Teacher-child transactions focusing on modifications of social transactions, impulse control, and classroom routine.

TRANSACTIONAL CATEGORIES: (coded in both cognitive and social transactions):

\+ Approval - Teacher operants with generally reinforcing effects (affective loadings take priority over cognitive content).

\- Disapproval - Teacher operants with generally punishing effects (aversive loadings take priority over cognitive content).

S Structuring - Teacher operants setting or eliciting performance goals and action, or proscribing certain actions (without aversive affect).

R Restructuring - Teacher operants repeating, clarifying, or modifying structuring behaviors; when negative affect (e.g., as in nagging) is present score as disapproval (-).

I Information - Teacher operants conveying information (but not setting or eliciting performance).

L Listening and Observing - Teacher non-verbal transactional behavior, attending to child or group operants.

1 - Cognitive Structuring
2 - Social Behavior Management

+ - Approval
- - Disapproval
S - Structuring
R - Restructuring
I - Information
L - Listening

1	1 L				L			
	2	+	+	I				
2	1 -							
	2	-	R	R	L			
3	1	I	R					
	2 S			S	R			
4	1 S				L			
	2		-	+				
5	1							
	2	I		S	R			
18	1 R	-	-	L				
	2							
19	1		L	R				
	2 -	I						
20	1 +	S						
	2		L	S				

FIGURE 2

OBSERVATIONAL DATA SHEET

Four faculty members at New Mexico State University, directly involved in undergraduate teacher preparation, and five graduate students, all experienced teachers and knowledgeable in teacher education, made up the panel of experts. The members of the panel were invited to view two 5-minute segments of videotaped teaching activity, and observe specifically the directed teacher motor behavior. At the conclusion of the taped presentations, they were asked to indicate, on a five point Likert scale, whether they agreed or disagreed on the presence of the behavior described within each of the six categories. Finally, they were asked to respond, again on a five point Likert scale, as to their agreement with the statement: "The above categories embrace the overt directed teacher motor behaviors of those teachers observed." The resulting data are presented in Table 3. The mean responses to all categories are above 4.0 (agree) indicating the presence of the behavior as defined in the teaching behavior observed. Furthermore, the mean response to the last item (7) is 4.55, indicating the panel of experts' strong agreement as to the inclusiveness of the categories with regard to motor behavior.

OBSERVATIONAL PROCEDURES

Videotaping Procedures

Two identical videotaping stations were established (see Figure 3). The television cameras were placed 20 feet from the teacher's chair with the lens five feet from the floor. Both cameras had 25 millimeter lenses providing a field of view 12 feet wide and 6 1/2 feet high at the teacher's position. With this arrangement, 81 square feet of floor space was visible. The cameras were fixed in position, and no operator was necessary. All video recording equipment, other than the camera, was placed outside the room to reduce the noise level and avoid operator distraction during the teaching sessions. An omnidirectional microphone for audio recording was suspended from the ceiling eight feet above the teaching position. Also, all cables were suspended from the ceiling to avoid equipment damage, reduce sources of distraction, and to avoid tripping the teachers and students. A final measure, employed to reduce the possibility of the teacher leaving the field of view during the recording session, consisted of barriers (tables) arranged just outside the field of camera view. These were necessary since the teaching stations were established in large classrooms and fixed cameras provided only a restricted view.

The above arrangements proved satisfactory. Numerous arrangements had been tried during the micro-teaching of the Ed. 455 students, and those employed during the test teaching situations had proved to be the most satisfactory for teaching the lessons. The possibility of cosmetic effects (nervous behavior, freezing, etc.) caused by first-time exposure to videotaping was considered. Care was taken that all participants had had a minimum of one in-class micro-teaching experience under similar conditions prior to the final videotaped test teaching situation.

The following routine was established during the taping of test teaching situations:

1. The teacher reported to the assigned preparation room, which contained all available materials, and received his instructions. One hour of preparation time was provided.

TABLE 3

PANEL OF EXPERTS RESPONSES TO VALIDATION
INSTRUMENT FOR MOTOR BEHAVIOR DESCRIPTION CATEGORIES

ITEM	MEAN	S.D.
Head Nodding (yes or no) (1SD) 1 (2D) 0 (3U) 0 (4A) 1 (5SA) 7	4.55	1.26
Arm Gestures (1SD) 0 (2D) 0 (3U) 0 (4A) 1 (5SA) 8	4.89	.32
Touching Students (1SD) 0 (2D) 0 (3U) 0 (4A) 3 (5SA) 6	4.66	.47
Media Manipulations (1SD) 0 (2D) 0 (3U) 0 (4A) 2 (5SA) 7	4.78	.42
Gross Movement (1SD) 0 (2D) 2 (3U) 0 (4A) 2 (5SA) 5	4.33	.94
None or Random (1SD) 0 (2D) 0 (3U) 0 (4A) 4 (5SA) 5	4.55	.50
The Above Categories Embrace the Overt Directed Motor Teaching Behaviors (1SD) 0 (2D) 0 (3U) 0 (4A) 4 (5SA) 5	4.55	.50

KEY:

1SD - strongly disagree
2D - disagree
3U - undecided
4A - agree
5SA - strongly agree

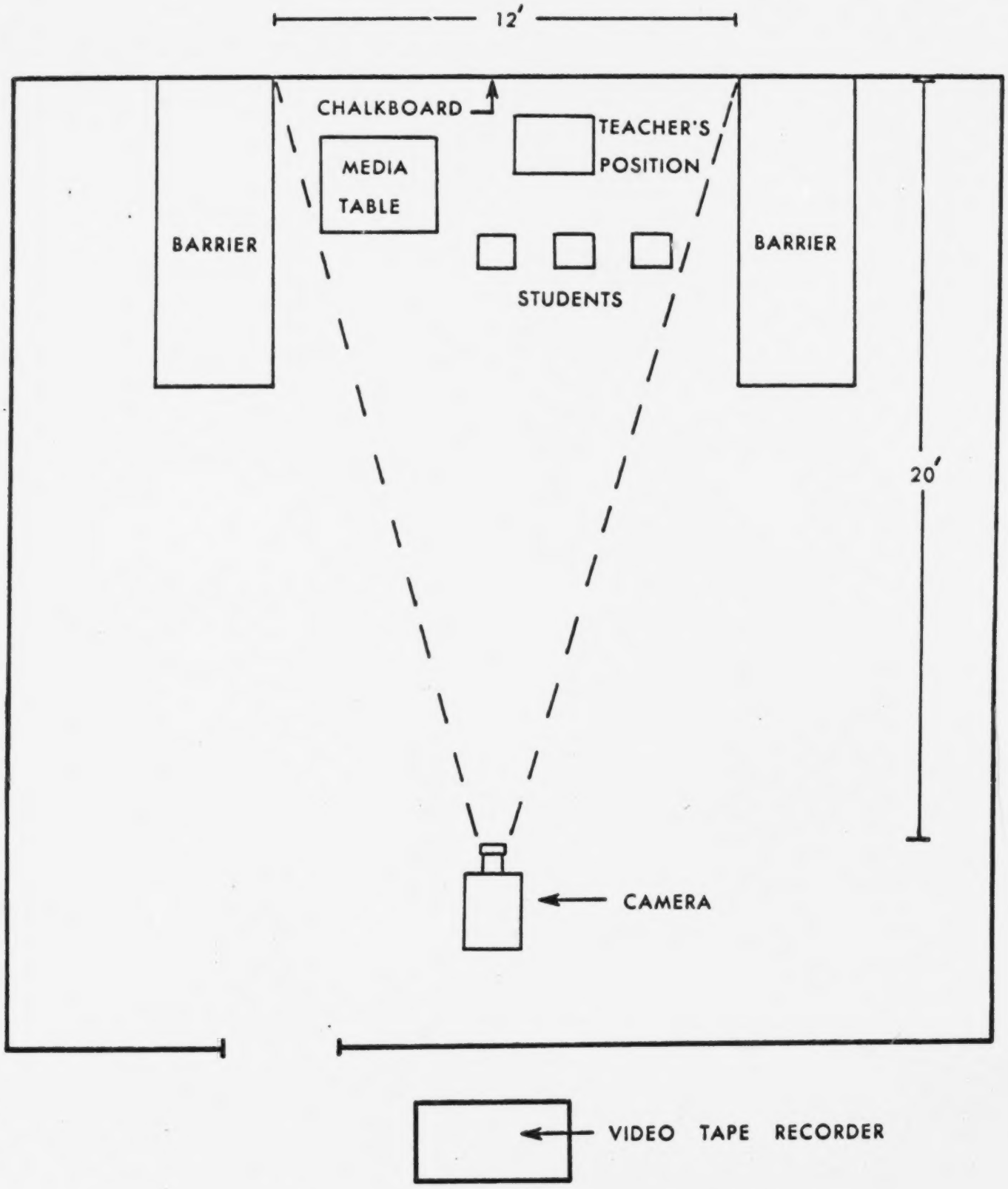

12'
CHALKBOARD
TEACHER'S
POSITION
MEDIA
TABLE
BARRIER
BARRIER
STUDENTS
20'
CAMERA
VIDEO TAPE RECORDER

Figure 3

2. At the end of the preparation period the teacher was escorted to his teaching station and given approximately five minutes to arrange his materials.

3. Then, the teacher was taken to the first grade classroom and introduced to his group of pupils, all wearing appropriate name tags.

4. Videotaping began upon the arrival of the teacher and pupils at the teaching station and concluded at their exit.

5. The teacher then escorted the pupils back to their classroom and returned the materials to the preparation room.

Training the Observers

The training sessions were designed to serve three functions: 1) introduce the observers to the observational systems, 2) achieve inter-observer reliability, and 3) determine the most practical routine for the final observations of the test tapes. Seventeen taped micro-teaching sessions were available for training purposes. These were sessions taped earlier in the semester and contained lesson content similar to that found in the final tapes.

A scheduled time sampling technique was employed during the observations. This technique has been employed in previous observational studies, i.e., Wright and Proctor.[11] A five second observation schedule was first attempted, but it was found that observer fatigue and the complexity of the decisions made this time segment too short. A 10-second interval was then attempted and found to be of satisfactory length. But a differential length of observer recording time caused a discrepancy in observer agreement as different amounts of behavior were observed. Thus, a five-second staggered observation schedule was adopted. The observers would observe for five seconds and then have five seconds to record the behavior observed. This proved the most successful arrangement as it reduced observer fatigue and increased observer agreement as the observers were focusing on the same bits of behavior. Also, a time sampling technique is recommended by Spaulding because it is economical in time and effort and provides for easier quantification of behaviors by adding up the frequencies in each category.[12]

A continuous loop for a tape recorder that emitted a tone of approximately four-tenths of a second duration every five seconds was constructed. Since confusion sometimes arose as to whether the observers were to be observing or recording, a different stimulus was needed. Therefore, a second continuous loop that emitted the verbal stimuli "observe" and "record" (each approximately five-tenths of a second in duration) at five-second intervals was constructed. Thus, one observation was recorded each ten seconds. The actual training of the observers took 28 hours for both instruments, the STARS and the MBDC. A minimum of 80 percent inter-observer tally agreement was established by the researcher as a sufficiently high standard to ensure reliable analysis. Furthermore, the inter-observer agreement of 80 percent had to be attained on three consecutive criterion tapes. Eight of the available 17 training tapes were reserved as criterion tapes.

Three observers were selected. The observers were paid for their training and final observation time. The training was spread over two weeks with each session lasting approximately two hours. After 8 hours of training the 80 percent criterion was reached on the STARS categories.

At this time the Motor Behavior Description Index Categories were introduced, as it was hoped that these behaviors could be coded in conjunction with the STARS categories. This was found to be impossible as observer agreement dropped to below the 70 percent level and did not meet the established 80 percent criterion. Thus, it was determined that the motor behavior would have to be observed spearately from the STARS.

Four hours of retraining for the STARS categories brought the observer agreement back to the 80 percent level. Table 4 contains the percentage of agreement between observers on the third STARS criterion tape, 12.5 minutes in length, which yielded 75 paired observations. Six hours of additional training were conducted on the Motor Behavior Description Categories. The observer agreement for these categories on the final criterion tape is also presented in Table 4. This tape was 17.8 minutes in length and consisted of 107 paired observations. The coding of the criterion tapes took approximately four hours of the training. The 80 percent level of agreement was surpassed on both category levels of the STARS and the Motor Behavior Description Categories.

Evaluation of the Final Tapes

The procedures for the evaluation of the final tapes had been established during the training of the observers. The observers were placed at a table, approximately three feet apart, eight feet from the television screen. They rotated positions at the conclusion of each tape. The observers were instructed to watch the rapport proceedings of the teacher (seating the students, etc) and record the first observation 20 seconds after the initial verbal lesson-oriented behavior. This point was established by the researcher with the aid of a stop watch. At the first verbal lesson-oriented behavior the stopwatch was started, and the number on the minute counter of the videotape recorder (accurate to 1/10 of a second) was recorded. When ten seconds had elapsed the observers were informed, and the audio tape recorder with the continuous loop was started. The observation was concluded at the first verbal indication of closure. The number on the minute counter was recorded at this time also.

This procedure was followed throughout the first viewing of the tapes when the behavior was recorded on the STARS observational system. After training for the Motor Behavior Description Categories the same procedure was followed except that the numbers recorded on the minute counter of the videotape recorder were used to begin and end the observation. This was done to insure the same number of observations on each subject and also, within the bounds of feasibility, that the same bits of behavior were recorded on both instruments. A total of 20 hours was spent conducting the observations.

The totals for each subject in each category were tallied and became the raw score data for the statistical analysis.

Inter-Observer Reliability

Inter-observer reliabilities on the final observations were computed on each category of both instruments. An analysis of variance method discussed by Winer was used to compute the two estimates of inter-observer reliability r_1 and r_3 given in Table 5.[13] The statistic r_1 is interpreted as the estimated reliability of an individual score, while r_3 is the estimated reliability of the mean of the observer scores and is computed from the Spearman-Brown prediction formula. Winer suggests the following

TABLE 4

PERCENTAGE OF AGREEMENT BETWEEN OBSERVERS
ON THE THIRD AND FINAL CRITERION
TRAINING TAPES FOR STARS AND
THE MOTOR BEHAVIOR
DESCRIPTION CATEGORIES

OBSERVERS	1 + 2	1 + 3	2 + 3
STARS			
Molar Categories	98.7%	97.3%	98.7%
Transactional Categories	89.3%	88.0%	90.7%
N = 75 paired observations			
Motor Behavior Description Categories	90.6%	91.6%	92.5%
N = 107 paired observations			

TABLE 5

r_1 and r_3 FOR ALL CATEGORIES OF STARS AND MOTOR BEHAVIOR DESCRIPTION CATEGORIES

	N = 20	
	r_1	r_3
STARS		
Molar Categories		
Cognitive Structuring	.95	.98
Social Behavior Management	.95	.98
Transactional Categories		
Approval	.88	.96
Disapproval	.81	.93
Structuring	.91	.97
Restructuring	.76	.90
Information	.94	.98
Listening and Observing	.89	.96
MOTOR BEHAVIOR DESCRIPTION CATEGORIES		
Head Nodding	.86	.95
Arm Gestures	.91	.97
Media Manipulation	.93	.97
Touching Students	.97	.99
Gross Movement	.83	.94
None or Random	.93	.98

interpretation of r_3: "If the experiment was repeated with three different observers but with the same subjects, the correlation between the mean scores on the same subjects would be r_3."[14]

The average inter-observer reliability for individual scores ($\overline{r}_1$) across all categories of the STARS observational system was .90 with a standard deviation (S.D.) of .07. The average inter-observer reliability of the mean scores ($\overline{r}_3$) across all categories of the STARS was .95 with a S.D. of .03. The corresponding averages for the Motor Behavior Description Categories were $\overline{r}_1$ = .89 with a S.D. of .05, and $\overline{r}_3$ = .97 with a S.D. of .02, thus indicating a high degree of observer agreement across all 20 tapes, and adding confidence to the raw category score data.

TREATMENT OF THE DATA

Data Reduction

The number of observations in each category was computed for each observer and formed the basic raw data for this study. The total frequencies in each category for each observer were summed and divided by three to form a "score" (average observed frequency) for that category.

The subjects of this study were instructed to prepare and present lessons of approximately 20 minutes in length. They were not restricted to this time limit but were instructed to terminate the lessons upon the attainment of their lesson objectives. Thus the tapes ranged in length (time observed) from 7 to 27.7 minutes. Since the observations were recorded at 10 second intervals and the frequencies within categories were a function of the total number of observations, it was necessary to adjust the scores to a common time interval.

All scores were adjusted to 16 minute observed time intervals which equated all groups to a total of 96 observations. This time interval was arbitrarily selected by the researcher since it was the nearest whole minute to the mean (15.85) and the median (16.17) length of the 20 observed time intervals.

The adjusted scores were computed in the following manner:

$$\frac{S_{ij}}{TO_i} = \frac{AS}{96}$$

Where:
S_{ij} = individual's score in category j
TO_i = total observations for individual i
AS = the adjusted score
These adjusted scores were the data utilized in the analysis.

Profile Formation

Cattell defines a profile: "...as a particular combination of measurements or categroies on a set of designated elements or aspects of a population."[15] Three dimensions of behavior are analyzed in profile form in this study. Two of these

dimensions, cognitive and behavior management, are derived from Spaulding's Teacher Activity Rating Schedule (STARS) and the third dimension, motor behavior, from the Motor Behavior Description Categories (MBDC). Appendix A contains an example of each of these behavior dimensions in profile form.

The category "none" or "random behavior" of the Motor Behavior Description Categories was not included in the comparative analysis of the teaching patterns. Two factors justify its exclusion: 1) The category was defined as non-directed teaching behavior and therefore not germane to the analysis of patterns of directed teacher motor behavior; and 2) A major assumption underlying the multivariate analysis techniques used in this study is that the variates be linearly independent. The removal of this category satisfies this assumption for the categories of directed behavior.

ANALYSIS OF THE DATA

Four sets of research hypotheses were tested in the study, corresponding to the four comparative objectives of the study. The first two objectives dealt with the consistency of the OLP and conventionally trained preservice teacher behavior patterns between T I (teaching an OLP lesson) and T II (teaching a teacher-prepared lesson), and the last two compared OLP and conventionally trained teachers in T I and T II. Three statistical hypotheses were proposed for each objective, corresponding to the three dimensions of behavior observed. A final analysis tested the amount of time each group used in actual lesson presentation to determine if there were significant differences. The .05 level of significance was selected.

THE STATISTICS

Multivariate Profile Analysis

The purpose of multivariate profile analysis is to compare the resemblance of two profiles. "Any two profiles may be viewed as having separate degrees of resemblance in 1) shape, 2) level, and 3) accentuation (steepness of profile) of shape."[16] The multivariate analysis formulas employed in this study to test these areas of resemblance are found in Morrison's Multivariate Statistical Methods.[17] The following discussion is provided to acquaint the reader with the analysis, its rationale and procedures.

Multivariate profile analysis examines the three areas of profile resemblance by answering the following questions:

1. Are the profiles statistically parallel?
2. If the profiles are parallel, are they at the same level?
3. If the profiles are parallel, are the category means at the same level?

The assumptions underlying Morrison's technique are as follows:

1. The units (individuals of the samples)are randomly and independently selected.
2. The scores are commensurable (expressed in comparable units).
3. The vector of combined residuals (error term in the following model, attributed to errors of measurement) has a multinormal distribution (error components are normally distributed in p dimensional space) with null mean vector (means of p error components = 0) and some unknown nonsingular covariance matrix (determinant of this matrix does not = 0).

4. The residual variates of different units are distributed independently.[18]

Note that Morrison's assumptions require neither equal residual variances within groups nor equal correlations.[19] Greenhouse and Geisser point out that most profile analysis techniques require equal residual variances or at least equal correlations.[20] These highly restrictive assumptions demand extremely conservative statistical tests. Morrison's technique does not require these restrictive assumptions, thus allowing more exact statistical tests.

The Mann-Whitney U Test

In the cases where the parallelism or levels test proved statistically significant with the multivariate profile analysis, i.e., the total behavior patterns were different, the Mann-Whitney U test was employed to determine which categories were contributing to the overall significance. Furthermore, on those analyses where no significance was apparent from the multivariate analysis, the Mann-Whitney U test was used to describe individual category differences. This test, which determines whether two independent groups have been drawn from the same population, was chosen for two reasons:

1. It produces an exact probability of the observed distribution occurring by chance, thus providing an indication of each category's contribution to the overall significance.
2. The groups analyzed were of relatively small size (n = 5) and since the test considers the rank value of each score, more information about the data itself is utilized.[21]

The formulas used for computing the Mann-Whitney U test are found in Hays, Statistics for Psychologists.[22] The assumption underlying this test is that if observations were drawn from two samples of the same population the score distributions would be equal. In other words, the scores from the samples would not separate themselves, with the scores of one sample congregating at one end or the other of the observed distribution. The test, under the preceding assumption, produces the exact probability of the observed distribution of scores occurring by chance.

In summary, the tests discussed in this section, multivariate profile analysis and the Mann-Whitney U test, were used to analyze the observed behaviors of the OLP and conventionally trained teachers in T I and T II. The multivariate analysis was employed to examine the total behavior profiles on the three behavior dimensions, while the Mann-Whitney U investigated the individual behavior categories making up the behavior profiles. The following analyses employing these statistical tools were designed to meet the objectives of this study.

RESULTS

The data presented in Tables 6 through 9 are the mean category frequencies and standard deviations making up the behavior profiles analyzed in this study. Table 6 contains the mean category frequencies and standard deviations for the Cognitive, Behavior management and Motor Dimensions of behavior for OLP teachers teaching OLP lessons. Table 7 contains the same data for OLP teachers teaching teacher-prepared lessons. Tables 8 and 9 have the same data respectively for the conventionally trained teachers. The resulting profiles (i.e. Appendix A) were subjected to analysis.

TABLE 6

MEAN CATEGORY FREQUENCIES AND STANDARD DEVIATIONS OF OLP TEACHERS TEACHING OLP LESSONS

Cognitive Structuring Categories

	Approval	Disapproval	Structuring	Restructuring	Information	Listening & Observation
$\bar{X}$	7.44	0.52	33.78	6.11	0.54	18.74
S.D.	3.86	0.58	2.88	5.04	0.56	4.70

Social Behavior Management Categories

	Approval	Disapproval	Structuring	Restructuring	Information	Listening & Observation
$\bar{X}$	0.38	0.0	25.71	0.22	0.0	1.12
S.D.	0.42	0.0	8.14	0.30	0.0	0.63

Motor Behavior Description Categories

	Head Nodding	Arm Gestures	Media Manipulations	Touching Students	Gross Movement
$\bar{X}$	5.05	9.30	23.04	10.41	1.26
S.D.	3.27	3.71	9.20	6.32	1.97

TABLE 7

MEAN CATEGORY FREQUENCIES AND STANDARD DEVIATIONS OF OLP TEACHERS TEACHING TEACHER PREPARED LESSONS

	Cognitive Structuring Categories					
	Approval	Disapproval	Structuring	Restructuring	Information	Listening & Observation
$\bar{X}$	15.35	0.92	39.66	3.94	3.05	29.23
S.D.	3.76	1.46	8.43	3.68	4.64	10.90

	Social Behavior Management Categories					
	Approval	Disapproval	Structuring	Restructuring	Information	Listening & Observation
$\bar{X}$	0.0	0.32	3.79	0.0	0.0	0.18
S.D.	0.0	0.44	2.77	0.0	0.0	0.25

	Motor Behavior Description Categories				
	Head Nodding	Arm Gestures	Media Manipulations	Touching Students	Gross Movement
$\bar{X}$	3.04	16.90	14.22	7.63	0.64
S.D.	4.20	7.56	9.07	5.59	1.22

TABLE 8

MEAN CATEGORY FREQUENCIES AND STANDARD DEVIATIONS OF CONVENTIONAL TEACHERS TEACHING OLP LESSONS

	Cognitive Structuring Categories					
	Approval	Disapproval	Structuring	Restructuring	Information	Listening & Observation
$\bar{X}$	6.09	0.50	36.75	4.07	0.35	19.46
S.D.	4.49	0.80	7.56	2.06	0.33	6.05

	Social Behavior Management Categories					
	Approval	Disapproval	Structuring	Restructuring	Information	Listening & Observation
$\bar{X}$	0.50	2.03	21.42	0.64	0.0	1.46
S.D.	0.97	3.02	6.61	0.48	0.0	0.68

	Motor Behavior Description Categories				
	Head Nodding	Arm Gestures	Media Manipulations	Touching Students	Gross Movement
$\bar{X}$	2.98	10.33	21.89	9.24	2.35
S.D.	1.27	4.27	5.57	4.01	2.37

TABLE 9

MEAN CATEGORY FREQUENCIES AND STANDARD DEVIATIONS OF CONVENTIONAL TEACHERS TEACHING TEACHER-PREPARED LESSONS

Cognitive Structuring Categories

	Approval	Disapproval	Structuring	Restructuring	Information	Listening & Observation
$\bar{X}$	12.81	0.63	41.00	3.32	4.68	27.81
S.D.	5.02	0.68	8.10	2.50	5.69	10.69

Social Behavior Management Categories

	Approval	Disapproval	Structuring	Restructuring	Information	Listening & Observation
$\bar{X}$	0.0	0.23	5.51	0.0	0.0	0.08
S.D.	0.0	0.41	6.06	0.0	0.0	0.17

Motor Behavior Description Categories

	Head Nodding	Arm Gestures	Media Manipulations	Touching Students	Gross Movement
$\bar{X}$	1.99	14.45	20.79	2.61	1.59
S.D.	2.29	12.49	9.60	3.19	1.51

Only the parallelism (profile shapes), the levels tests and the Mann Whitney U analyses are discussed. The Categories test was significant in all cases indicating that the profiles were significantly different from a straight line. In other words, the frequencies of behaviors observed were not distributed equally between the categories. This indicates that the categories were functionally distinct and that the teachers exhibited significantly different amounts of behavior between categories. In all cases, then, the profiles were peaked and the categories were functionally distinct from one another. This result indicates that the observers were able to discriminate and categorize the observed teaching behaviors. Furthermore, that the teachers did not exhibit differential amounts of behavior within categories on the various dimensions of behavior observed. These results will not be discussed for each group of analyses reported. The actual statistical values on which the following results are reported are found in Appendix B, tables 10-32.

Behavioral Profile Analyses

The comparison of the behavior profiles of preservice Oral Language Program trained teachers in T I and T II revealed no significant profile shape differences on the three dimensions of behavior observed. However, significance was observed as to the profile levels (amount of behavior) of cognitive and behavior management behavior profiles between T I and TII. Preservice teachers trained with the Oral Language Program exhibited significantly more cognitive behavior when teaching teacher-prepared lessons and significantly more behavior management behaviors when teaching Oral Language Program lessons. The Mann-Whitney U test indicated that significantly more approval behavior was observed on the cognitive dimension and structuring and listening and observing behaviors approached significance at the .15 level in the teacher-prepared lessons. On the behavior management dimension, significantly more structuring and listening and observing behaviors were present during the OLP lessons and approval approached significance at the .15 level. The motor behavior profile levels for Oral Language Program trained teachers were not significantly different between T I and T II. The Man-Whitney U revealed no significant differences between test situations within categories.

The cognitive and motor behavior profiles of preservice teachers trained in the Conventional program teaching T I and T II lessons proved to be the same shape when subjected to multivariate profile analysis. Significance was observed as to the levels of the cognitive profiles between T I and T II. The Mann-Whitney U revealed that on the cognitive dimension, the conventionally trained teachers exhibited significantly more informative behavior while teaching teacher-prepared lessons. Approval also approached significance at the .10 level in these lessons. The motor behavior profile levels between T I and T II for the conventionally trained teachers were not significantly different. The Mann-Whitney U did reveal, however, that the Conventional teachers did touch the students significantly more while teaching OLP lessons. On the behavior management dimension of behavior, multivariate profile analysis did reveal that the T I and T II profiles for the conventionally trained teachers had significantly different shapes. The Mann-Whitney U analysis of the individual categories within the behavior management dimension revealed that significantly more structuring, restructuring, and listening and observing behaviors were observed while the conventionally trained teachers were teaching Oral Language Program lessons.

Comparative analysis of behavior profiles of preservice teachers trained with the Oral Language Program and the Conventional Program revealed no significant difference in profile shapes or levels on the cognitive and motor behavior dimensions while teaching Oral Language lessons. The Mann-Whitney U also revealed no significant

differences between groups within individual categories on either of the above dimensions of behavior. The profile analysis did reveal that the group profile shapes were significantly different on the behavior management dimension in T I. The Mann-Whitney U analysis of the difference between groups within the individual categories of this dimension revealed that the conventionally trained teachers exhibited significantly more disapproval than the teachers trained with the Oral Language Program while teaching Oral Language Program lessons.

Multivariate Profile analysis of preservice teachers trained with the Oral Language Program and in the Conventional Program revealed no significant differences as to profile shapes or levels between groups on any of the three dimensions of behavior in T II. The Mann-Whitney U analysis of individual categories within the three behavior dimensions between the two groups also revealed no significant differences in T II.

Analysis of the Length of Actual Teaching Time

The subjects of this study were instructed to prepare and present lessons of approximately 20 minutes in length. They were not restricted to this time limit, but were instructed to terminate the lessons upon the attainment of their lesson objectives. Since the observations were recorded at 10-second intervals and the frequencies within categories were a function of the total number of observations, the category scores were adjusted to common time intervals for the preceding analyses.

The actual teaching times ranged from 7 to 27.7 minutes. Fisher's t-tests were conducted to determine whether there was a difference in mean teaching times between group and test situations. The results of these analyses can be found in Table 34 (Appendix B).

In all cases in which the OLP group was compared to the Conventional group, significant differences were found. OLP teachers completed their lessons in shorter periods of time. No significance was observed within groups between teaching situations. It would appear that the length of the lessons was definitely a function of the training and not the curriculum since significant differences were observed between groups and not within groups between test situations.

DESCRIPTIVE SUMMARY

This summary describes the teaching patterns of the OLP and Conventional groups. Each group will be discussed in the context of the two teaching situations (T I and T II).

The following descriptions are based on the STARS and MBDC behavior categories and the resultant analyses of this study. They are stated in terms of group parameters while acknowledging the presence of individual teacher variation. The point of reference for these descriptions is the OLP trained teachers teaching OLP lessons. The ensuing descriptions will compare and contrast the observed behaviors of other groups with this reference.

OLP Trained Teachers Teaching OLP Lessons

OLP trained teachers spent 13.13 minutes in actual lesson teaching time when presenting OLP lessons. Approximately 70% of this time was spent in cognitive

structuring, that is, verbal behavior focusing on modification of thinking and conceptual structures, while 30% focused on social behavior management, discipline, and classroom activity involving the change from one activity to another. In both of the above areas, a majority of the behaviors were directed at the setting or eliciting of performance gaols or actions and givin directions (structuring). Approximately 50% of the cognitively oriented behavior was of a structuring nature, while 89% of the behavior management dimension was involved in the eliciting or setting of goals and actions. Very little overt discipline of a disapproving nature was evidenced since there were no instances of disapproving management behaviors. On the motor behavior dimension, approximately 60% of the observed behaviors were lesson or pupil oriented behaviors. Thirty-eight percent of these behaviors involved media manipulations; while arm gestures and physical teacher-student contacts each accounted for 15% of the behaviors.

Conventionally Trained Teachers Teaching OLP Lessons

The conventionally trained teachers spent 17.16 minutes in actual lesson teaching time when teaching OLP lessons. This was a significantly longer period of time than the 13.13 minutes used by the OLP trained teachers. Neither patterns of behavior on the cognitive dimension, nor the amount of cognitive behavior exhibited were significantly different. On the social behavior management dimension the patterns of behavior were statistically non-parallel. There was significantly more disapproval on this dimension. OLP trained teachers exhibited 0.0% disapproving behaviors while conventionally trained teachers exhibited 2.2% disapproving behaviors on this dimension of behavior, when teaching OLP lessons. The patterns of motor behaviors proved to be statistically similar and with no significant differences as to the overall amount of directed teaching motor behavior exhibited.

OLP Trained Teachers Teaching Teacher-Prepared Lessons

OLP trained teachers exhibited the same patterns of behavior while teaching OLP and teacher-prepared lessons. There were, however, significant differences in the amounts of cognitive and social behavior management behaviors exhibited. On the cognitive dimension significantly more behavior was observed in T II. Approximately 95% of the observed behaviors were in this dimension, with significantly more approval evidenced in the teacher-prepared lessons. Eliciting and listening behaviors were higher and approached significance. The same patterns of behavior were evidenced on the social behavior management dimension of behavior but significantly fewer of these behaviors were observed. Specifically, there were significantly less eliciting or directing behaviors, which on this dimension indicates a fewer number of different curricular activities taking place during the lesson. Significance was also reached with fewer occurrences of listening and observing behaviors in these lessons. The patterns evidenced on the motor behavior dimension were not significantly different for OLP teachers teaching teacher-prepared lessons than those observed for OLP teachers teaching OLP lessons. The teacher-prepared lessons were 12.33 minutes in length, which was not significantly different from the 13.13 minutes used in the OLP lessons.

Conventionally Trained Teachers Teaching Teacher-Prepared Lessons

The conventionally trained teachers took 22.01 minutes to present their teacher-prepared lessons, significantly longer than the 12.33 minutes that OLP teachers used

when teaching teacher-prepared lessons. The pattern of cognitive behaviors was not statistically different from their presentations of the OLP lessons or the OLP trained teacher presentations of teacher-prepared lessons. The amount of cognitive behavior exhibited also did not differ significantly from that displayed by the OLP trained teachers. A significant difference was observed, however, when the amount of cognitive behaviors displayed on these lessons was compared to conventionally trained teachers presenting OLP lessons. Specifically, the Conventional teachers displayed significantly more informative behaviors, and approving behaviors approached significance when presenting teacher-prepared lessons. On the behavior management dimension, the pattern of behaviors was significantly different from that displayed by the teachers when presenting OLP lessons. There was less structuring, restructuring, and listening and observing behaviors exhibited in the teacher-prepared lessons, indicating occurrence of fewer different curricular activities during the lessons. The conventionally trained teachers did not differ significantly from the OLP teachers presenting teacher-prepared lessons. No significant differences were noted in the area of motor behavior when compared to the conventional teachers presentations of OLP lessons or OLP teachers teaching teacher-prepared lessons.

INTERPRETATION OF THE FINDINGS

The following interpretations should be considered in light of the assumptions and limitations underlying this study:

Assumptions

1. The categories of the Spaulding's Teacher Activity Rating Schedule and the Motor Behavior Description Categories were valid and reliable.
2. That random selection of the samples from the two sections of Education 455 (Developmental Reading) minimized unobserved group differences.
3. The equal assignment of teaching stations between samples and test teaching situations equalized possible behavior differences associated with station environment.
4. The equal assignment of the groups of first-grade pupils to samples and test situations equalized behavior differences associated with pupil differences across samples and test situations.

Limitations

1. This study was limited to the 20 students selected from the 46 preservice teachers enrolled in the two sections of Developmental Reading (Ed. 455) during the spring semester, 1970.
2. The groups of pupils taught in the test teaching situations were limited to those first-grade pupils located in the Dove Learning Center at New Mexico State University.
3. Scheduling and registration procedures imposed constraints, not permitting the random assignment of preservice teachers to treatment groups.
4. Course requirements and time constraints restricted the sample size to five teachers from each group for each test teaching situation.
5. Different instructors taught the two sections. Due to University procedures and scheduling constraints, it was impossible to control for instructor effect.

With these assumptions and limitations taken into consideration, the following interpretations and conclusions are presented.

Interpretation

The major differences found in this study reside primarily in two areas: length of lesson presentation time and behavior management teaching behaviors.

To interpret the finding that OLP trained teachers taught shorter lessons when teaching OLP lessons and teacher-prepared lessons, the structure of the Oral Language Program lessons must be considered. These lessons present the teacher with specific operationally defined objectives of desired pupil output behaviors. As the teachers proceed through the lesson, they are to elicit specific pupil behaviors. When the pupils respond in the prescribed manner (meet the objective of that activity) the teacher proceeds to the next activity. In addition, OLP teachers are encouraged to follow the specified activities in the exact order that they are presented.

Two additional factors must be discussed relative to the interpretation of the finding related to length of lesson presentation time. First, the pupils taught in the test teaching situations had experienced a full semester of intensive oral English instruction and for the most part, as reported by the laboratory classroom teacher, had good to excellent English language usage. In other words, these pupils were, in a sense, primed for oral English lessons. They would, and did, generally respond quickly to new oral English material. Second, the conventionally trained teachers and the OLP trained teachers presented the same OLP lessons so specific lesson length could not account for the significantly shorter OLP lessons taught by OLP trained teachers. In the teacher-prepared lessons this was not the case, as each teacher prepared his own lesson. Nevertheless, OLP trained teachers still taught significantly shorter lessons. Thus, neither pupil response nor specific lesson content have affected overall lesson length.

In light of the Oral Language Program characteristics and the preceding discussions, the following interpretation is suggested. OLP teachers were trained to follow specific lesson plans that moved quickly from activity to activity. They had experience teaching to specific objectives. They learned to seek and evaluate specific pupil responses relative to the lesson objectives. It is suggested that OLP teachers would, then, be less likely to be side-tracked from the lesson objectives and would achieve the lesson objectives in a shorter period of time. It is suggested further that these experiences were transferred to the teacher-prepared lessons.

An alternative interpretation to this finding could be as follows: OLP trained teachers received their tutorial experience or practice teaching in micro-teaching experiences. Due to time, class load, and equipment constraints, these experiences were shorter than the public school experiences of the conventionally trained teachers. Thus, the OLP teachers may have become accustomed to the shorter lesson time.

The second area of major difference found in this study was in the behavior management dimension of behavior. The interpretation of this finding is related to the previous discussions in this section. Both the OLP trained teachers and the conventionally trained teachers exhibited significantly more structuring (setting of performance goals, giving directions, etc.) behavior on this dimension of behavior while teaching OLP lessons. This would indicate that more varied curricular activities involving student participation were taking place during the OLP lessons. The conventionally trained teachers exhibited significantly more disapproving behaviors on this dimension of behavior when teaching OLP lessons than did the OLP trained teachers. It is suggested that this finding is directly related to the previous finding and

interpretation. The conventionally trained teachers appeared to have more behavior problems while teaching OLP lessons than did the OLP trained teachers. Possibly pupil boredom due to overall longer presentations and activities led to more behavior problems that elicited the disapproving teacher behavior.

Two alternative interpretations suggest themselves for this finding. First, OLP trained teachers may have employed other behaviors, such as directing a question at the student, etc., to control student behavior problems. Second, the unfamiliarity of the Conventional teachers with the curriculum and the necessary activity changes may have led to unnecessary delays, leading to pupil behavior problems that the teachers felt required disapproving teacher behaviors. These interpretations are based on the findings of this study and the experience of the researcher. They are not meant to be conclusions, but possible they may stimulate some further research with the Oral Language Program and teachers trained in its utilization.

CONCLUSIONS

The conclusions developed from this research should be considered in light of the assumptions and limitations, mentioned earlier, underlying the study.

They are as follows:

1. OLP trained teachers exhibit similar patterns of behavior between teacher-prepared lessons and OLP lessons on the three dimensions of behavior observed.
2. Conventionally trained teachers exhibit consistent patterns of behavior on the cognitive and motor dimensions of behavior between teacher-prepared and OLP lessons, but the behavior management patterns are inconsistent with significantly more structuring, restructuring, and listening and observing behaviors present in the OLP lessons.
3. OLP and conventionally trained teachers exhibit similar patterns of behavior on the cognitive and motor behavior dimensions when teaching OLP lessons, but the patterns are significantly dissimilar on the behavior management dimension. Conventionally trained teachers exhibited significantly more disapproving behaviors than the OLP teachers on the behavior management dimension of behavior.
4. OLP and conventionally trained teachers exhibit similar patterns of behavior on all three dimensions of behavior (cognitive, behavior management, and motor behavior) observed when teaching teacher-prepared lessons.
5. The behavior management profiles for both OLP and conventionally trained teachers indicate a significantly greater amount of this behavior in the OLP lessons compared to teacher-prepared lessons. Specifically, the significant structuring category (setting performance goals, giving directions, etc.) indicates that more curricular activities take place during the OLP lessons.
6. Assessment of the intermediate goals of teacher training or methodology courses through observational procedures is a viable concept.
7. Multivariate profile analysis is a highly informative statistical tool when appraising patterns of teacher behavior, since total dimensions of behavior can be compared rather than individual categories.
8. It is possible to objectively describe patterns of preservice teacher behavior on the cognitive, behavior management, and motor behavior dimensions of behavior.[23]

RECOMMENDATIONS RELATED TO PROGRAM DEVELOPMENT

The following recommendations are not only based on the conclusions of this study, but they also include the subjective observations of the researcher throughout the implementation of the OLP Program and the course of this research. In a sense, these are decision-oriented recommendations and the adoption of these recommendations rests with the course instructors. They must evaluate the recommendations in light of the specific objectives they devise for Developmental Reading (Ed. 455).[87]

The recommendations are as follows:

1. That the OLP training be confined to the tutorial experience and that the emphasis be placed on the teaching behaviors associated with the OLP rather than the OLP as a reading curriculum.

2. That the OLP training be continued. This recommendation is made in light of the results of this study and the observation that curriculum developments are (tending) toward the highly structured curriculums such as the OLP (i.e., BSCS, SRA's DISTAR, etc.). It was evidenced that teachers trained with the OLP were able to handle the tightly structured, faster paced OLP lessons on the behavior management dimension. Conventionally trained teachers exhibited significantly more disapproval on the behavior management dimension when teaching OLP lessons than when they were teaching teacher-prepared lessons. Furthermore, the entire behavior management behavior patterns were different for the conventionally trained teachers when their OLP lesson presentations were compared to the teacher-prepared presentations. This was not the case for the OLP trained teachers.

3. It is recommended that the Quality Assurance instrument developed by the Southwestern Cooperative Educational Laboratory be employed during the OLP training. This instrument measures the opportunities present and those opportunities where the specific behaviors associated with the OLP were used. It is this researcher's observation that many of the opportunities available to the OLP trained teachers for the use of specific OLP behaviors were missed. The use of this instrument, especially when the student is viewing his own videotaped micro-teaching efforts, would help the students identify the opportunities for the specific employment of the OLP behaviors.

4. It should be emphasized that the "OLP behaviors" are not designed specifically for the OLP curriculum, but that these teaching techniques are applicable in all teaching (i.e., reinforcement techniques, nonverbal communication, etc.).

5. The comparative analyses of the behavior profiles, cognitive, behavior management, and motor, between groups while teaching OLP lessons, and teacher-prepared lessons revealed that the profiles were very similar. The only significant difference observed on behavior profiles was on the behavior management dimension within the OLP test situation. A review of the behaviors advocated in the Oral Language Program and the observation of "ideal" OLP teachers identified by the Southwestern Educational Laboratory would lead this researcher to expect more profile differences. It would appear that the treatment employed for these studies of OLP teachers could have been more intense. It is recommended that the treatment be intensified either through the extension of the tutorial period or perhaps a more intense behavioral orientation during the tutorial period rather than a curricular orientation.

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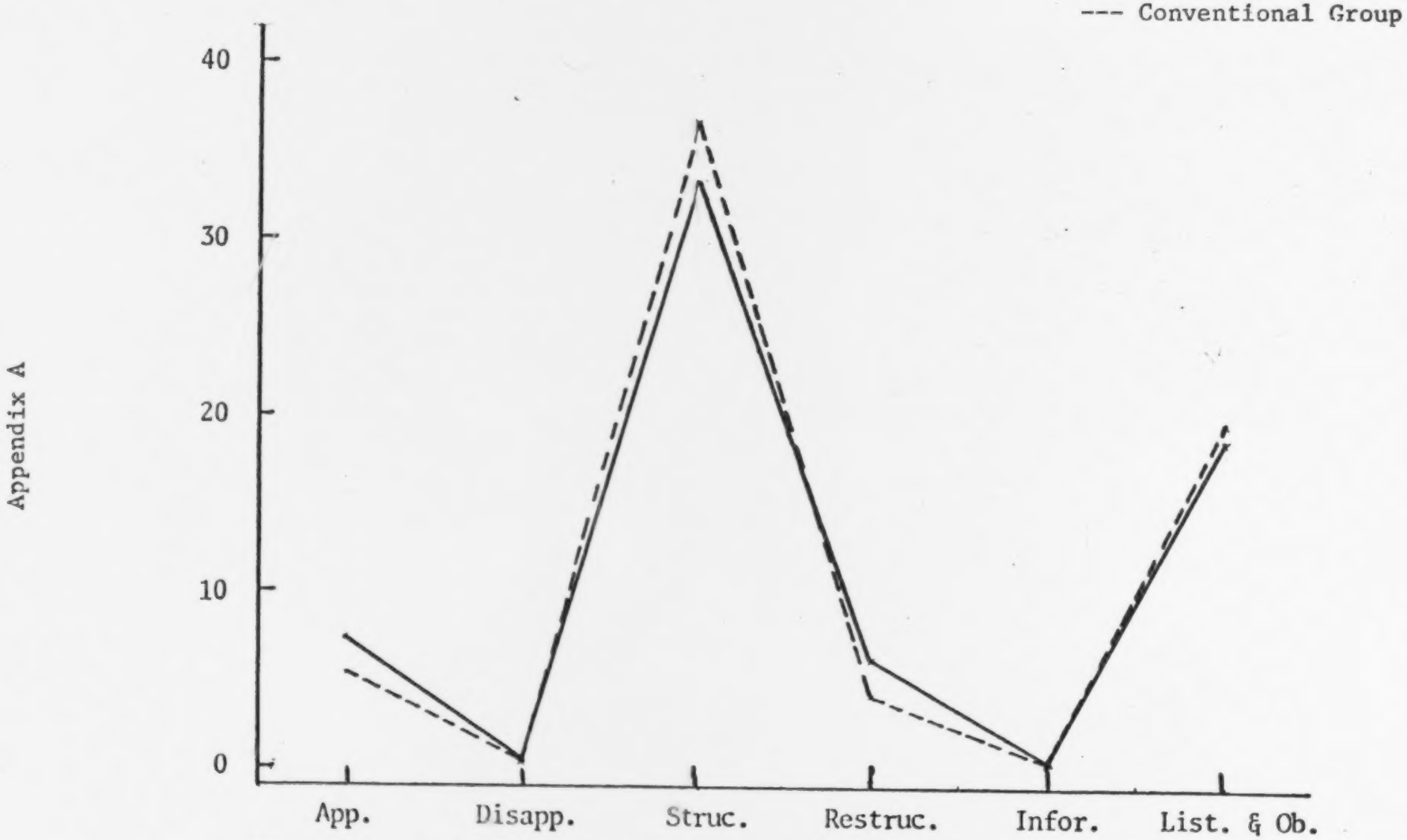


Figure 4: Mean Frequency Profiles for Spaulding's Cognitive Categories of OLP Group and Conventional Group Teaching OLP Lessons

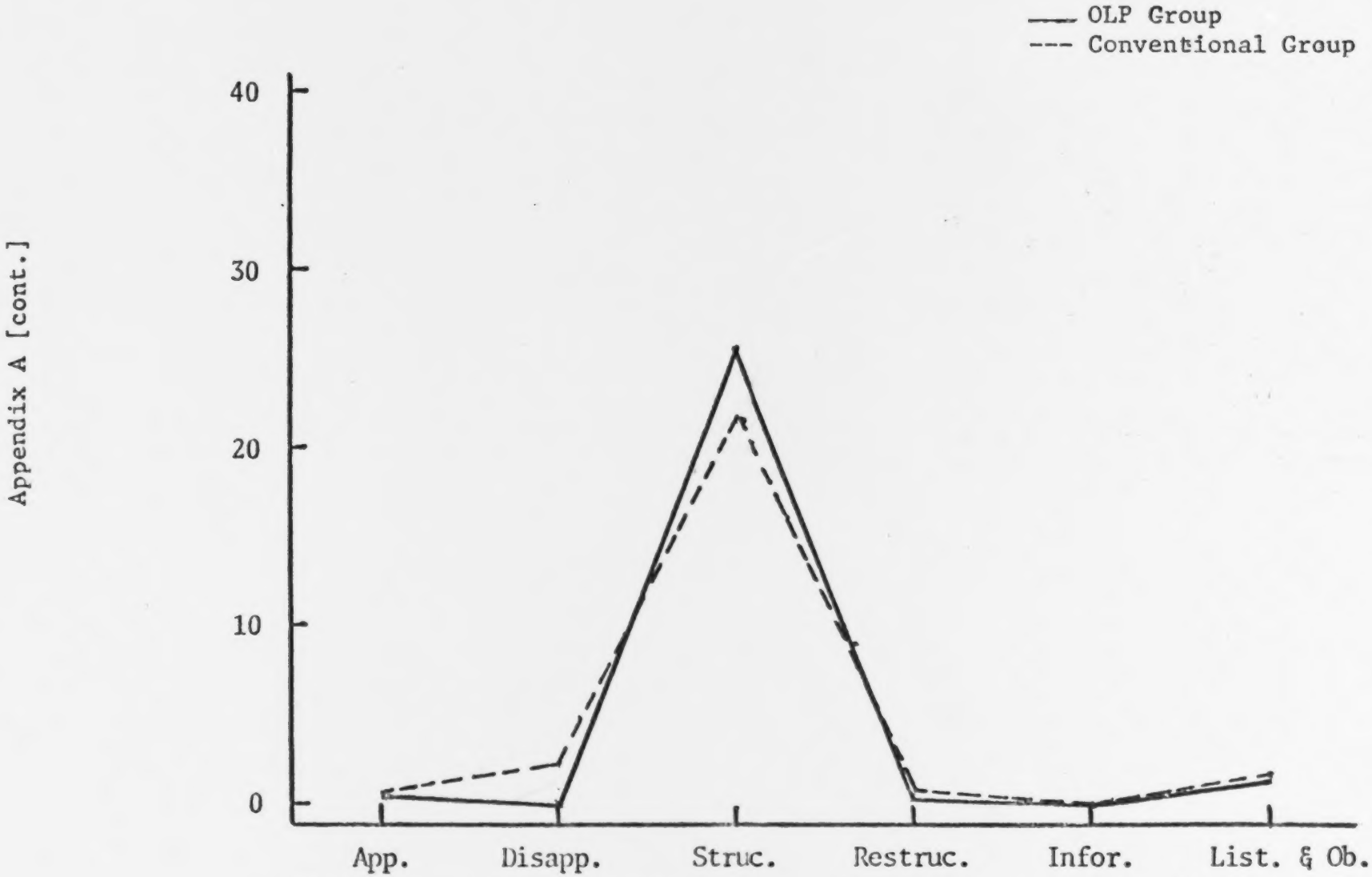


Figure 5: Mean Frequency Profiles for Spaulding's Social Behavior Management Categories of OLP and Conventional Groups Teaching OLP Lessons

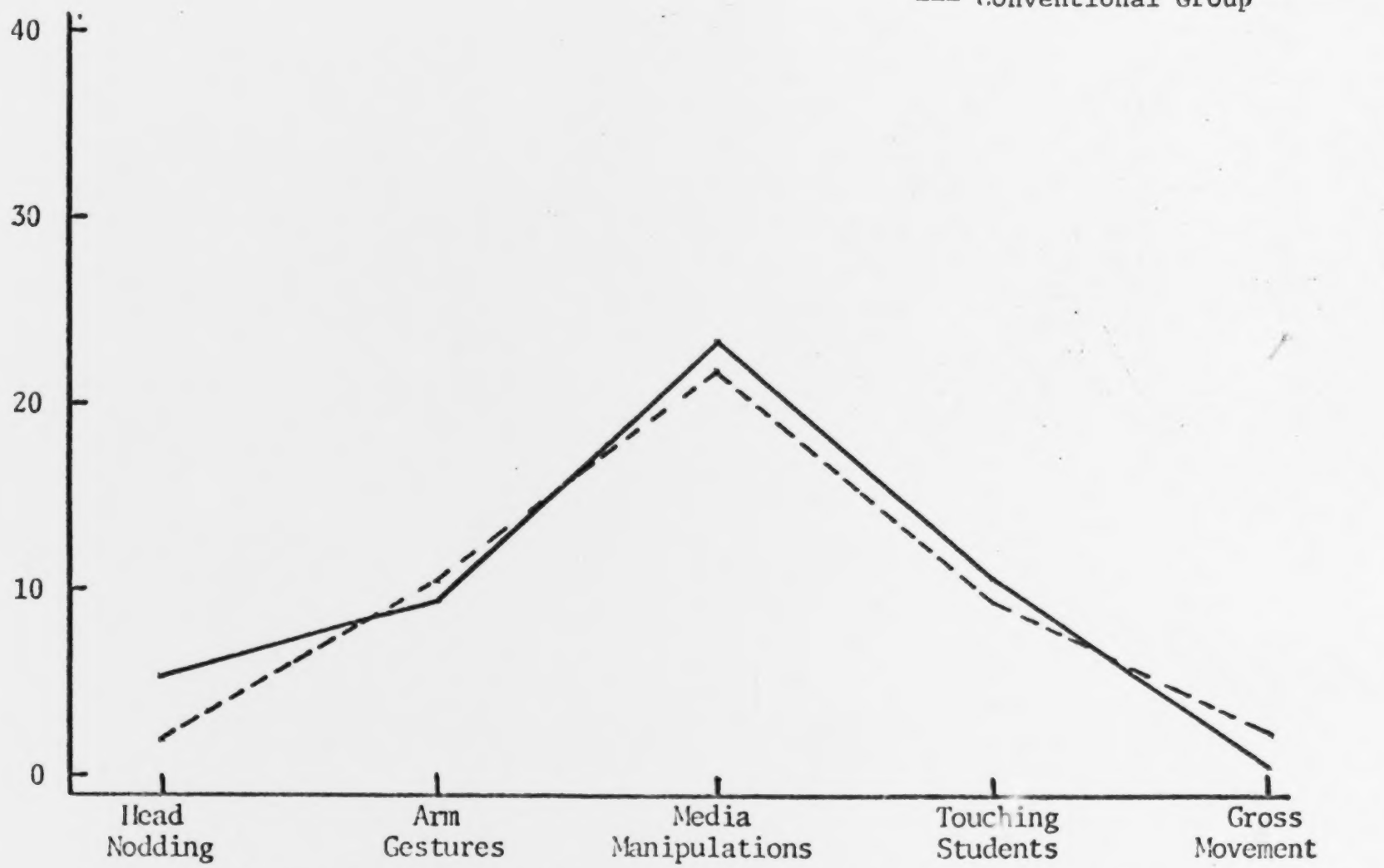


Figure 6: Mean Frequency Profiles for Motor Behavior Description Categories of OLP and Conventional Groups Teaching OLP Lessons

APPENDIX B

Table 10. Profile Analysis on Cognitive Behaviors Of OLP Teachers in T I and T II

TESTS	F	df
Parallelism	7.08	6,3
Equal Levels	41.91*	1,8
Equal Categories	138.83*	5,4

Table 11. Mann-Whitney U Analysis of Individual Categories on the Observed Cognitive Behavior Dimension of OLP Teachers in T I and T II

CATEGORY	PROBABILITY**
Approval	.02
Disapproval	1.00
Structuring	.15
Restucturing	1.00
Information	.31
Listening and Observing	.15

Table 12. Profile Analysis of Behavior Management Behaviors of OLP Teachers in T I and T II

TESTS	F	df
Parallelism	2.92	6,3
Equal Levels	33.46*	1,8
Equal Categories	14.75*	5,4

Table 13. Mann-Whitney U Analysis of Individual Categories on the Observed Behavior Management Dimension of OLP Teachers in T I and T II

CATEGORIES	PROBABILITY**
Approval	.15
Disapproval	.36
Structuring	.01
Restructuring	.36
Information	1.00
Listening and Observing	.02

*Significant at or above the .05 level.
**The probability of the observed distribution of scores occurring by chance.

Table 14. Profile Analysis of Motor Behaviors of OLP Teachers in T I and T II

TESTS	F	df
Parrallelism	.81	4,5
Equal Levels	.99	1,8
Equal Categories	18.68*	4,5

Table 15. Mann-Whitney U Analysis of Individual Categories on the Observed Motor Behavior Dimensions for OLP Teachers in T I and T II

CATEGORIES	PROBABILITY**
Head Nodding	.42
Arm Gestures	.22
Media Manipulations	.55
Touching Students	.15
Gross Movement	.06

Table 16. Profile Analysis on Cognitive Behaviors of Conventional Teachers in T I and T II

TESTS	F	df
Parallelism	2.12	6,3
Equal Levels	19.39*	1,8
Equal Categories	97.78*	5,4

Table 17. Mann-Whitney U Analysis of Individual Categories on Observed Cognitive Dimension of Conventionally Trained Teachers in T I and T II

CATEGORIES	PROBABILITY**
Approval	.10
Disapproval	.69
Structuring	.31
Restructuring	.55
Information	.03
Listening and Observing	.22

*Significant at or above the .05 level.
**The probability of the observed distribution of scores occurring by chance.

Table 18. Profile Analysis of Behavior Management Categories of Conventionally Trained Teachers in T I and T II

TEST	F	df
Parallelism	30.75	6,3

Table 19. Mann-Whitney U Analysis of Individual Categories on the Observed Behavior Management Dimension of Conventionally Trained Teachers in T I and T II

CATEGORIES	PROBABILITY**
Approval	.36
Disapproval	.12
Structuring	.03
Restructuring	.04
Information	1.00
Listening and Observing	.01

Table 20. Profile Analysis of Motor Behaviors on Conventionally Trained Teachers in T I and T II

TESTS	F	df
Parallelism	.74	4,5
Equal Levels	.72	1,8
Equal Categories	19.86*	4,5

Table 21. Mann-Whitney U Analysis of Individual Categories on the Observed Motor Behavior Dimensions of Conventionally Trained Teachers in T I and T II

CATEGORIES	PROBABILITY**
Head Nodding	.42
Arm Gestures	.69
Media Manipulation	.55
Touching Students	.03
Gross Movement	.76

*Significant at or above the .05 level.
**The probability of the observed distribution of scores occurring by chance.

Table 22. Profile Analysis of Cognitive Behaviors of OLP and Conventionally Trained Teachers in T I

TESTS	F	df
Parallelism	.21	6,3
Equal Levels	.0001	1,8
Equal Categories	124.10*	5,4

Table 23. Mann-Whitney U Analysis of Individual Categories on the Cognitive Dimension of OLP and Conventionally Trained Teachers in T I

CATEGORIES	PROBABILITY**
Approval	.42
Disapproval	.84
Structuring	.69
Restructuring	.54
Information	.69
Listening and Observing	1.00

Table 24. Profile Analysis of Behavior Management Categories of the OLP and Conventionally Trained Teachers in T I

TEST	F	df
Parallelism	12.33	6,3

Table 25. Mann-Whitney U Analysis of Individual Categories on the Observed Behavior Management Dimension of the OLP and Conventionally Trained Teachers in T I

CATEGORIES	PROBABILITY**
Approval	.69
Disapproval	.04
Structuring	.42
Restructuring	.18
Information	1.00
Listening and Observing	.69

*Significant at or above .05 level.
**The probability of the observed distribution of scores occurring by chance.

Table 26. Profile Analysis of the Observed Motor Behaviors of OLP and Conventionally Trained Teachers in T I

TESTS	F	df
Parallelism	.28	4,5
Equal Levels	.09	1,8
Equal Categories	11.37*	4,5

Table 27. Mann-Whitney U Analysis of Individual Categories on the Observed Motor Behavior Dimension of OLP and Conventionally Trained Teachers in T I

CATEGORIES	PROBABILITY**
Head Nodding	.15
Arm Gestures	.69
Media Manipulation	.84
Touching Students	.69
Gross Movement	.55

Table 28. Profile Analysis of Cognitive Behaviors on OLP and Conventionally Trained Teachers in T II

TESTS	F	df
Cognitive Behaviors:		
Parallelism	.10	6,3
Equal Levels	.44	1,8
Equal Categories	200.78*	5,4

Table 29. Mann-Whitney U Analysis of Individual Categories on the Cognitive Dimension of OLP and Conventionally Trained Teachers in T II

CATEGORIES	PROBABILITY**
Approval	.42
Disapproval	1.00
Structuring	.69
Restructuring	1.00
Information	.42
Listening and Observing	.84

Table 30. Profile Analysis of Behavior Management Behaviors of OLP and Conventional Teachers in T II

TESTS	F	df
Behavior Management:		
Parallelism	.15	6,3
Equal Levels	.28	1,8
Equal Categories	5,421,934.00***	5,4

*Significant at or above the .05 level.
**The probability of the observed distribution of scores occurring by chance.
***This extreme F value is a function of the low frequencies observed on this dimension of behavior in T II.

Table 31. Mann-Whitney U Analysis of Individual Categories on the Observed Behavior Management Dimension of OLP and Conventionally Trained Teachers in T II

CATEGORIES	PROBABILITY**
Approval	1.00
Disapproval	1.00
Structuring	1.00
Restructuring	1.00
Information	1.00
Listening and Observing	.69

Table 32. Profile Analysis of Motor Behaviors of OLP and Conventionally Trained Teachers in T II

TESTS	F	df
Parallelism	1.17	4,5
Equal Levels	.04	1,8
Equal Categories	114.97*	4,5

Table 33. Mann-Whitney U Analysis of Individual Categories on the Observed Motor Behavior Dimension of OLP and Conventionally Trained Teachers in T II

CATEGORIES	PROBABILITY**
Head Nodding	.84
Arm Gestures	.55
Media Manipulation	.22
Touching Students	.15
Gross Movement	.26

*Significant at or above the .05 level.
**The probability of the observed distribution of scores occurring by chance.

TABLE 34

MEANS, STANDARD DEVIATIONS AND t-TEST SCORES
OF LESSON ORIENTED TEACHING TIME

	MEAN	S.D.	df	t
OLP (T I & T II)	12.73	3.32	18	-3.36
Conventional (T I & T II)	19.63	5.58		
OLP (T I)	13.13	3.42	8	.36
OLP (T II)	12.33	3.57		
Conventional (T I)	17.16	2.95	8	-1.40
Conventional (T II)	22.01	7.16		
OLP (T I)	13.13	3.42	8	-1.99*
Conventional (T I)	17.16	2.95		
OLP (T II)	12.33	3.57	8	-2.70*
Conventional (T II)	22.01	7.16		

*Significant at or above the .05 level